J. HILLS.
Stop-Cock.

No. 208,313. Patented Sept. 24, 1878.

Fig. 1.

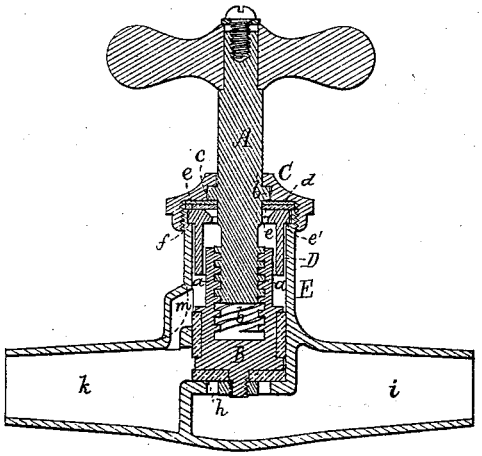


Fig. 2.

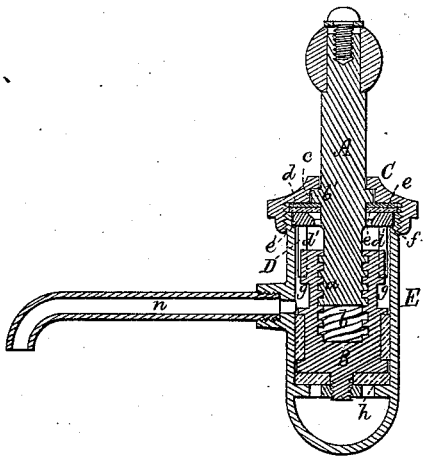


Fig. 4.

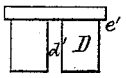


Fig. 5.

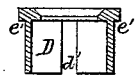


Fig. 3.

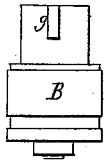


Fig. 6.

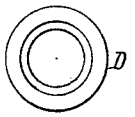


Fig. 8.

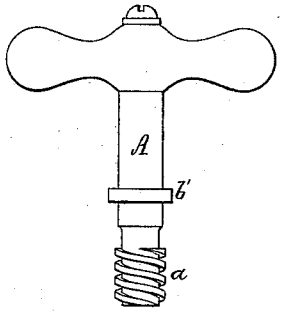
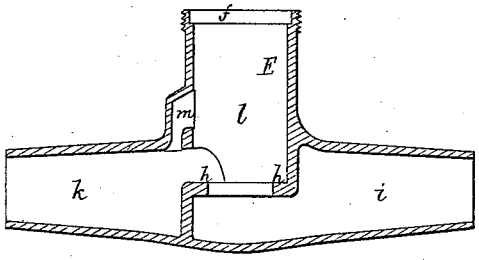


Fig. 7.



Witnesses.
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John R. Sinnott

Inventor.
Jacob Hills.
by his attorney
R. H. Eddy

UNITED STATES PATENT OFFICE.

JACOB HILLS, OF HAYDENSVILLE, MASSACHUSETTS.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. **208,313**, dated September 24, 1878; application filed July 24, 1878.

To all whom it may concern:

Be it known that I, JACOB HILLS, of Haydensville, in the county of Hampshire and State of Massachusetts, have invented a new and useful Improvement in Stop-Cocks; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a longitudinal section, and Fig. 2 a transverse section, of a stop-cock provided with my invention. Fig. 3 is a side view of its piston-valve. Fig. 4 is a side elevation, Fig. 5 a transverse section, and Fig. 6 a top view, of the valve-sleeve. Fig. 7 is a longitudinal section of the body of the cock as it appears without its cap and the valve-sleeve and key. Fig. 8 is a side view of the key.

The said stop-cock has some of the characteristics of the basin-faucet shown in Letters Patent No. 109,902, dated December 9, 1870, and granted to me—that is to say, the mechanism for effecting the movements of the valve toward and off its seat is substantially like that described in the patent; and consists, in part, of a key, A, provided with a male screw, *a*, to enter a female screw, *b*, in the valve B. To the shank of the screw there is a fixed or annular collar or flange, *b'*, which fits into a corresponding recess, *c*, made in the cap C. Below the flange *b'*, and on the shank, is a metallic washer, *d*, which has beneath it a leather or india-rubber washer, *e*, which rests on the top of the body and that of the slotted sleeve D. The said sleeve D encompasses the neck of the valve, has two slots, *d' d'*, in its opposite sides, and is provided with a shoulder, *e'*, at its top. This shoulder rests or fits in a circular rabbet or channel, *f*, made in the upper part of the body E of the cock, and is held firmly therein and from revolving by the aforesaid washers and by the cap C, when the latter is firmly screwed down.

The sleeve, by receiving in its slots two ears, *g g*, projecting from the valve B, prevents said valve from revolving with the key and allows the valve to be moved toward or off its seat *h*. The induct *i* of the cock terminates below and opens through the valve-seat, the educt *k* opening out of and leading from the valve-chamber *l* above the seat, in manner as shown. This chamber is cylindrical, and the valve is also cylindrical, or is a piston, to fit closely or water-tight to the periphery of the chamber, as well as to the seat at the bottom of such chamber.

In carrying out my invention, I have combined with the stop-cock, made or provided with the piston-valve, as described, means of effecting, when the valve is closed, discharge of water from the inner educt of the cock and a pipe leading therefrom, the same being to prevent, in cold weather, freezing of water or liquid in the said pipe, and the consequent bursting of the pipe.

Such means or additions consist, first, of a conduit, *m*, leading from the educt upward outside of the valve-chamber and opening into it just above the piston-valve when the latter is down upon its seat, the opening being closed by the piston-valve when raised off its seat; second, of an educt, *n*, leading laterally out of the valve-chamber and above the valve when the latter is on its seat.

With these educts *m* and *n* it will be seen that both will be closed by the piston-valve while being raised in the valve-chamber to allow of the passage of fluid through the cock; but when the valve is next depressed upon its seat, so as to cut off the flow of fluid through the cock, all the fluid in the educt *k* will, if under a head or pressure, escape therefrom into and through and out of the valve-chamber, and thus the compression-cock is made by my improvement to answer as a waste-cock.

The stop-cock hereinbefore described, though in some respects analogous to that shown in the United States Patent No. 48,673, differs materially therefrom, inasmuch as the latter has no piston-valve to close the passage by which the water escapes into the valve-chamber, there being devices to close a passage leading to the educt of the valve-chamber.

It will be seen that the piston-valve of my stop-cock works directly against the end of the induct *m*, which is covered when the valve is raised, and uncovered when the valve is down upon its seat; and that, in consequence thereof, I am enabled to dispense with the devices as used in the other cock mentioned for closing the educt of its valve-chamber, and thus simplify the cock and materially lessen the cost thereof.

My stop-cock also differs from the hydrants shown in the United States Patents Nos. 50,155 and 25,683, as in each of the latter the piston-valve, when raised, closes the educt for discharge of waste-water, whereas in my stop-cock the waste-water induct is closed by the piston-valve when the latter is raised, which saves chambering the valve, as becomes necessary to the construction shown in the said Patent No. 25,683, and, besides, enables me to use the educt *k* with the induct *i* and separated passage *m*, which cannot be effected by the construction shown in Patent No. 50,155.

What I claim as my invention is—

A faucet or stop-cock having its valve-chamber provided with a piston-valve, and with auxiliary educts *m* and *n*, arranged therewith and with the main educt *k* and induct *i* of said chamber, substantially as described, and to operate as set forth, whereby the upper end of the educt *m* may be closed by the piston-valve when the latter is raised off its seat.

JACOB HILLS.

Witnesses:
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